REMARKS

Claims 1-43 are pending in this application.

Claims 5-13 and 20-27 are allowed.

Claims 37-38 and 42-43 are objected to.

Claims 1-4, 14-19 and 28-35 and 39-41 are rejected

The final office action dated May 17, 2004 indicates that claims 1-2, 16-17 and 29 are still rejected under 35 USC §102(a) as being anticipated by Harrington U.S. Patent No. 6,031,581; and that claims 4, 14-15, 19, 28, 31, 33, 35 and 39-41 are rejected under 35 USC §103 as being unpatentable over Harrington. Claims 3 and 8 are rejected under 35 USC §103 as being unpatentable over Harrington in view of others. These rejections are respectfully traversed.

Claim 1 recites a method of reducing chromatic bleeding artifacts in a digital image, the method comprising reducing chrominance values of at least some pixels in the digital image. The chrominance value of a pixel is reduced according to its "chromatic dynamic range."

As described in the specification, the chromatic dynamic range includes minimum and maximum values, which are taken from a local neighborhood of pixels. Claim 2 recites that these minimum and maximum values are a function of minimum and maximum chroma values of a local pixel neighborhood.

Harrington discloses a method of adjusting chrominance values to have a change profile more like luminance (col. 4, lines 20-23). If chrominance of a pixel is changed, the difference between the original and changed values (the error) is distributed to neighboring pixels that have yet to be processed (col. 4, lines 23-25). In the equations at col. 4, lines 31-56, chrominance differences between a pixel (plus its error) and its two neighboring pixels are scaled by luminance edge

behavior (col. 4, lines 39-41). The new chrominance value of the pixel is given by an equation at col. 4, line 60. The output of this equation (c_0) is "the average of values generated from vertical and horizontal edges" (col. 4, lines 64-65). Thus far, Harrington does not teach or suggest reducing chrominance value of a pixel according to its ***chromatic dynamic range***.

The output c_0 can be limited by the minimum and maximum values c_{max} and c_{min} in a local neighborhood according to an equation at col. 5, line 25. The first step is taking the minimum of the output c_0 and the local maximum (c_{max}). Thus the result of step reduces c_0 if c_0 exceeds the local maximum. The second step is taking the maximum of the local minimum and the result of the first step. If the result of the first step is less than the local minimum, then c_0 is ***increased***. For example, if c_{max}=10, c_{min} =5 and c_0=1, the result of the first step is MIN(10,1)=1, and the result of the second step MAX(5,1)=5.[1] Thus the limiting operation increases the value of c_0 if c_0 is less than c_{min}. Only the local maximum, not a range, is used to reduce the pixel chrominance value.

In claim 1, the chrominance value is reduced by the chromatic dynamic range, not only by the local maximum. Therefore, Harrington does not disclose a method having every limitation of claim 1. Accordingly, the '102 rejection of Harrington must be withdrawn.

Harrington does not suggest using a dynamic range to reduce a chrominance value. Therefore, claim 1 and its dependent claims 2-4, 14 and 30-31 should be allowed over Harrington.

[1] Thus the argument on page 2 of the office action is incorrect; the equation C(z) does not inherently reduce the chrominance to a minimum value. As demonstrated by the example, the chrominance can be increased to the local minimum.

Claim 15 recites a method of reconstructing a digital image from a luminance channel and subsampled chrominance channels. The method includes selectively reducing chrominance values of at least some pixels in the digital image. The pixels are selectively reduced according to chromatic dynamic ranges. Claim 15 should be allowed because Harrington et al. do not teach or suggest reducing a chrominance value based on a chromatic dynamic range.

Claim 16 recites a processor for selectively reducing chrominance values of pixels in a digital image, the pixels being selectively reduced according to chromatic dynamic ranges. Claim 16 and its dependent claims 17-19, 28 and 32-33 should be allowed because Harrington et al. do not teach or suggest reducing a chrominance value based on a chromatic dynamic range.

Claim 29 recites a program that, when executed, causes a processor to reduce chromatic bleeding artifacts in a digital image by selectively reducing chrominance values of pixels in the digital image. The chrominance value of a pixel is selectively reduced according to chromatic differences in a local neighborhood of the pixel. Claim 29 and its dependent claims 34-35 and 39-41 should be allowed because Harrington et al. do not teach or suggest reducing a chrominance value based on a chromatic differences in a local neighborhood.

The application should now be in condition for allowance. If any further issues remain, the examiner is invited to contact the undersigned to discuss those remaining issues.